

likely to be cost-saving (in three studies). Prevalence of disease, diagnostic accuracy and cost of PET were the most influential variables. Ranges for sensitivity, specificity and the cost of PET were 53%–100%, 82%–95% and €787–€1,225, respectively. Sources of bias in the diagnostic accuracy studies were mainly related to the representative patient population and interpretation of the index test and reference case. Critical assessment of the CEAs revealed that issues of documentation, feasibility of adopting PET in daily practice and generalizability were key areas that affected quality. **CONCLUSIONS:** PET, as a reliable diagnostic tool, has the potential to improve disease detection and avoid futile procedures that can lead to morbidity and high costs. Given the limitations of the existing studies, future CEAs should prospectively explore the expanding applications and cost-effectiveness of PET in SCCHN.

#### PMD62

##### COST-EFFECTIVENESS IN DIAGNOSTIC TESTS: COMPARISON OF THE IBD PRE-ENDOSCOPIC SCREENING F-CALPROTECTIN TEST VERSUS SEROLOGIC MARKERS IN SELECTED EUROPEAN MARKETS

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**OBJECTIVES:** The majority of bowel disorders exhibit a limited number of overlapping symptoms, making diagnosis very difficult in primary care. The inflammatory bowel diseases (IBD) are characterized by chronic inflammation of the gastrointestinal tract; the irritable bowel syndrome (IBS) is a functional disorder, with prevalence 10%–20% (Bellini, 2011). Endoscopy is considered as the gold standard procedure for detecting and quantifying IBDs, but due to the low prevalence of IBD (Molodecky, 2012), it turns negative in most of the cases, it is expensive, uncomfortable and risky for the patient. F-Calprotectin is a faecal marker of intestine inflammation; IBD patients exhibit F-Calprotectin levels significantly higher than the general population; IBS patients have F-Calprotectin levels significantly lower than IBD patients. Therefore, F-Calprotectin can be used as a pre-endoscopic technique to differentiate between IBD and IBS. We aim at evaluating the cost-effectiveness of F-Calprotectin tests compared to the standard pre-endoscopic tests (combined usage of serologic markers CRP - C-reactive protein - and ESR - erythrocyte sedimentation rate) to distinguish IBD from IBS in selected European markets (UK, SW, FR). **METHODS:** F-Calprotectin and CRP+ESR test accuracy was evaluated on existing data; the costs (diagnostic tests, diet, medications, and indirect costs) were collected from the literature. The analysis was tailored to children, teenagers and adults. The outcomes include cost avoidance, cost per corrected IBD diagnosed, and endoscopies reduction. Uncertainty was addressed with sensitivity analysis. **RESULTS:** Results show that the usage of F-Calprotectin is cost-effective with respect to CRP+ESR: a) it results in more corrected IBD diagnoses at a lower price (in UK it costs £50 less per adult patient than CRP+ESR), b) it reduces the number of unnecessary endoscopies. **CONCLUSIONS:** F-Calprotectin is a cost-effective methodology to rule out IBD at the primary care level, and it has a higher accuracy than CRP+ESR.

#### PMD63

##### A REVIEW OF ECONOMIC EVALUATION MODELS FOR CARDIAC RESYNCHRONIZATION THERAPY WITH IMPLANTABLE CARDIOVERTER DEFIBRILLATORS IN PATIENTS WITH HEART FAILURE

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**OBJECTIVES:** Cardiac resynchronization therapy with biventricular pacemaker (CRT-P) is considered an effective treatment for heart failure (HF). Adding implantable cardioverter defibrillators (CRT-D) may further reduce the risk of sudden cardiac death (SCD). However, economic evaluations have shown that incremental cost-effectiveness ratios (ICERs) of CRT-D may be substantially higher than for comparators, due to large numbers of patients which do not get additional benefits from CRT-D. Therefore, current research, like 'Biomarkers to predict cardiac failure, arrhythmias and success of treatment' (COHFAR), is trying to identify a set of (bio)markers that predict the response to CRT-D. The objective of this study was to review full economic models evaluating implantable CRT-D for patients with HF, compare the structure and inputs of the cost-effectiveness models and identify the main factors influencing the ICERs for CRT-D. **METHODS:** A comprehensive search strategy of PubMed, Embase, Web of Science identified six full economic models evaluating CRT-D against optimal pharmacological therapy (OPT) and/or CRT-P. All studies included a Markov or other state transition model for the long term follow-up of the HF patients. Four studies included a comparison of CRT-D with CRT-P while two others compared CRT-D with OPT. **RESULTS:** Studies differed in terms of time horizons and comparators. The inputs for the models were mainly taken from two trials, only one of which compared CRT-D and CRT-P to OPT. Generally, CRT-D was found cost-effective when compared to OPT but its cost-effectiveness became questionable when compared to CRT-P. This depended on cost of devices, mortality due to SCD and battery longevity. **CONCLUSIONS:** A better identification of patients that are more likely to benefit from CRT-D (i.e. those with higher risks of SCDs) will certainly have an effect on the cost-effectiveness of this technology in comparison to CRT-P.

#### PMD64

##### CAN MOLECULAR ALLERGOLOGY IMPROVE ALLERGEN-SPECIFIC IMMUNOTHERAPY ADHERENCE AND PATIENT QUALITY OF LIFE IN A COMPLEX POLLEN AREA?

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**OBJECTIVES:** Sensitization to pollen is common in the Mediterranean Area, and patients are frequently treated with allergen-specific immunotherapy (SIT); in SIT

the precise identification of the disease-eliciting allergen is a requisite for long-lasting therapeutic effect. SIT is prescribed following the EAACI Guidelines using skin prick test (SPT) (Alvarez-Cuesta, 2006). Nowadays, molecular allergology (MA) gives more accurate information about the true patient sensitization, and the usefulness of adding MA to SPT for SIT-indication is demonstrated in (Sastre, 2012). Non-adherence to SIT is a major hurdle, contributing to poor clinical outcomes: 39% of pediatric patients receive SIT for less than 6 months and only 16% for >3 years (Hankin, 2008; similar data for adults in Senna, 2010). In this study, we analyze this multi-dimensional phenomenon merging all the measures available in the literature in one HE model: 1) data on high inaccuracy of guideline-based diagnostics (Sastre); with 2) the hypothesis of improvements by MA; with 3) QoL measures from (Ciprandi, 2010); with 4) SIT-adherence (Hankin and Senna); with 5) SIT monitoring by MA. **METHODS:** A total of 141 patients with allergic rhino-conjunctivitis and/or asthma sensitized to pollen from a complex pollen area (Spain) were SPT tested, and subsequently MA was performed using a microarray-based panel of 96 allergens (ImmunoCap ISAC®). The model covers a 3-year timeframe; the outcomes include the number of SITs correctly prescribed, and cost-effectiveness (CE). Uncertainty was addressed with sensitivity analysis. **RESULTS:** Results show that adding MA to SPT reduces SIT prescriptions by at least 20% (substantial costs saving), and allows for a more targeted (i.e. more successful with a higher QoL) SIT. **CONCLUSIONS:** Our results based on available data from multiple studies show that MA usage for SIT prescription is CE, and can increase SIT-adherence. We recommend a clinical trial capturing all the multi-dimensional aspects of this phenomenon should be conducted for model validation purposes.

#### PMD65

##### THE COST EFFECTIVENESS OF HAND HELD ULTRASOUND SCANNING FOR AAA IN ELDERLY SUBJECTS WITH A HISTORY OF SMOKING

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**OBJECTIVES:** Abdominal aortic aneurysm (AAA) is a chronic, progressive disease that often requires surgical repair. The risk of rupture and death both increase with the size of the aneurysm. Scanning patients to identify the presence of an aneurysm and monitoring its growth is an important diagnostic practice for managing these patients. The present study investigates whether the use of a portable hand held device is cost effective in a hypothetical population of 10,000 (e.g., 65 years of age) male subjects with a history of smoking who would otherwise not be screened for AAA. **METHODS:** The study performed cost utility analysis, developing a simulation model that compared the incremental cost per quality-adjusted life year gained for four alternative scenarios. Scenario I received no scanning and Scenarios II – IV differed on what size AAA was to be treated if detected. Model input values were taken from the literature. The screened scenarios differ in terms of the size at which aneurysms were treated surgically. **RESULTS:** The total expected costs were: \$20.4 million, \$33.2 million, \$19.8 million, and \$18.7 million for Scenarios I to IV respectively. The total expected deaths were: 72, 39, 50, and 58 for Scenarios I to IV respectively. The incremental cost effectiveness ratio for Scenario II vs. Scenario I was \$64,160. Compared to Scenario I, Scenario III and IV were dominant. **CONCLUSIONS:** Under all of the treatment arms, the use of the handheld scanning device was cost effective relative to the Scenario I cohort. Treating patients with medium or large aneurysms (Scenario III) or just large aneurysms (Scenario IV), substantially enhances the cost effectiveness. These results suggest that primary care physicians should consider this device as a cost effective method to identify and treat AAA patients among male patients who are elderly and have a history of smoking.

#### PMD66

##### HEALTH-ECONOMIC ANALYSIS OF THE SYSTEMATIC USE OF SINGLE-HAND SECURED HUBER NEEDLES (POSITIVE-PRESSURE) IN FRENCH HOSPITALS

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**OBJECTIVES:** Implantable ports (IPs) are widely used in therapeutic areas where frequent vascular accesses are required. The use of IPs represents a practical solution and offers comfort to patients; however it is associated with significant obstruction rate, which may lead to high hospital costs. Single-hand secured Huber needles (SSHNs) are designed to reduce the frequency of catheter obstructions compared to two-hand Huber needles (THNs). To assess the economic and organizational impact of the systematic use of SSHN from a hospital perspective, a decision tree model was designed. **METHODS:** Resource consumptions and costs (Euros 2012) associated with the systematic use of SSHN and THN were collected in French hospitals of Paris area (AP-HP). Both strategies were evaluated along the reperfusion process (when it occurred). Probabilities of obstruction were extracted from published literature and estimated by experts when not available. Deterministic and probabilistic sensitivity analyses (DSA and PSA) were performed to appraise the uncertainty around estimated parameters; **RESULTS:** The simulation showed that the systematic use of SSHN is associated with lower hospital expenses compared to THN. Based on the use of 10,000 needles per year, its systematic use would save €27,360 annually (total cost of €147,540 versus €174,897). In particular, a total of €16,259 related to consumables and medical procedures would be directly saved from hospital budget. The remaining part would result in 0.13 nursing full-time equivalent (FTE) and 0.03 medical FTE, which could be reallocated to other activities. DSA showed that baseline obstruction rate is the most influential variable for annual cost and PSA confirmed that SSHN is the least expensive strategy. **CONCLUSIONS:** The reduction of use of consumables derived from the model was in line with observations in AP-HP. The systematic use of SSHN would probably lead to a reduction in expenses for hospitals, and staff time saved.